

said fluid supply catheter located within said sheath and adapted for motion with respect to said sheath;

whereby said catheter body can be moved independently of said sheath distal tip.

12. A catheter system according to claim 11 wherein said internal diameter of said sheath is larger than the maximum diameter of said catheter.

13. A catheter system according to claim 11 wherein said internal diameter of said sheath is substantially equal to the maximum diameter of said catheter.

14. A catheter comprising:

a catheter body having a proximal end and having a distal end;

said catheter body defining an axis;

said distal end having an approximately circular cross section;

a fluid injection lumen in said catheter body terminating near the distal end, for connection to a device for injecting fluid at a first rate;

one or more apertures at the distal end of the catheter body, connecting the fluid supply lumen with the exterior surface of said catheter body;

said aperture defining at last one aperture direction for the emerging flow that lies between approximate ninety degrees and zero degrees, as measured from an axis along the catheter body, where zero degrees corresponds to a directly retrograde flow and ninety degrees corresponds to lateral ejection from the catheter body;

said aperture cooperating with said catheter body to direct a flow of fluid emerging from said aperture along said catheter body such that fluid flows in a retrograde direction from said distal end toward said proximal end.

19. The catheter of claim 14 further including :

a control body surface located immediate adjacent said aperture, providing a barrier located proximate said aperture, for limiting fluid entrainment from the location of said control body, near the aperture by the jet emerging from the aperture, whereby said jet is deflected by a pressure difference across said barrier.

21. The catheter device of claim 19 wherein a tangent drawn to said control body surface at the location of the aperture is parallel to the aperture direction.

22. The catheter device of claim 19 wherein a tangent drawn to said control body surface at the location of the aperture forms an included angle with the aperture direction that is greater than zero degrees and less than ninety degrees.

23. A extraction catheter system for removing embolic material from a vessel having a vessel diameter, said system comprising:

a sheath having a sheath lumen adapted to receive and guide a catheter, said sheath lacking an occlusion device but having an exterior diameter sized to fit in said vessel partially occluding but not totally occluding said vessel;

said catheter having a catheter body having a distal end and a proximal end and having an interior and an exterior surface;

a fluid supply lumen in said catheter body, for connection to a device for injecting fluid at a first rate;

a fluid port connecting said fluid supply lumen with the exterior surface of said